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Native and Foreign Trees. The number of foreign trees here which are superior to those which grow naturally in New England is not a large one. The handsomest Poplar probably which is perfectly hardy here and grows successfully is *Populus Maximowiczii*, a native of eastern Siberia, eastern Saghalin and northern Japan. It is the largest tree of eastern Siberia where it sometimes grows eighty feet high with a trunk six feet in diameter, and has a broad head of massive spreading branches. On young trees the bark of the trunk is smooth and pale brown but on old trees it becomes thick and furrowed. It has been growing in the Arboretum since 1878. The oldest trees in the Arboretum are on the southern slope of Peter's Hill and are now twenty-six years old and from forty to forty-five feet in height. They have never been attacked by borers which make the cultivation of the Balsam Poplars and some of the Cottonwoods so difficult and unsatisfactory, and their leaves apparently have no attraction for leaf-eating caterpillars; they are green and lustrous on the upper surface, silvery white below, three or four inches long and two and a half inches wide. *Populus Maximowiczii* is the handsomest and most satisfactory tree in the Poplar Collection and is one of the few large exotic trees with deciduous leaves which can be recommended for general planting in the northern states. The list of such trees is a short one. The two Silver Poplars of Europe, *P. alba* and *P. canescens*, flourish in the United States where they have grown to a large size and are as much at home as they are in their native countries. The pale color of the foliage of these trees is unlike that of any of the American species, and their hardiness and vitality make them useful for planting in an

exposed position. The Silver Poplar of northern China (*P. tomentosa*) is one of the handsomest of all Poplar-trees. It has grown fairly well in the Arboretum but it is too soon to form an opinion of its value in this country.

Two European tree Willows, *Salix alba* and *S. fragilis*, and some of their hybrids have become naturalized in the northeastern states where they grow as large or even larger than in Europe and are important additions to the North American silva. The so-called Wisconsin Willow, a natural hybrid between *S. babylonica* and *S. alba*, and other hybrids of the same parentage, are useful ornamental trees in the northern states.

Cercidiphyllum is the largest deciduous-leaved tree of Japan, and although it was introduced into the United States only forty years ago it promises to become a permanent addition to the trees of large size which can be successfully grown here. The Chinese White Mulberry (*Morus alba*) is a larger and hardier tree in New England than the Mulberry-tree of the eastern states, and is perfectly at home here. Probably the most generally useful, however, of the large deciduous-leaved trees which have been brought into the northern states is the Ailanthus of northern China. It is perfectly hardy and grows rapidly and it can resist the heat, drought and dryness which trees have suffered in our cities better than any other tree with the exception perhaps of some of the Poplars. The Ailanthus, too, produces wood which is valuable in cabinet-making.

Of all the Elm-trees of the world not one equals in grace and beauty the White Elm of eastern North America, *Ulmus americana*. It is a true lover of the country, however, and only shows its greatest beauty in the deep moist soil of a New England intervale; moved to the city it soon languishes, for it resents city conditions of overdrained soil, smoke and bad weather. One of the so-called English Elms, known usually as *U. campestris*, is better able to thrive in cities where the American Elm fails, and in Boston and its suburbs this tree has been growing for more than a century and has proved itself valuable. It is now known that this name must be abandoned as there are four British Elms and a species of northern and eastern Europe which were included in Linnaeus' description of the European Elm. The tree which has usually been called the English Elm in Boston under the name of *Ulmus campestris* has been growing certainly for more than a century in Massachusetts where it has attained a large size. More than a century ago Major Paddock had a nursery at Milton for the propagation and sale of this tree. Probably no tree, native or foreign, which has been planted in the neighborhood of Boston has grown to such a size. The Paddock Elms which stood on Tremont Street in front of the Granary Burying Ground were of this species, as were the great Elms on the Tremont Street Mall of the Common which were killed by the Subway. The Elm-trees on each side of the Shaw Monument opposite the State House are of this species, and there are still large specimens in the suburbs of the city.

None of the exotic Ash-trees are really valuable in New England. For general planting in the eastern United States no Ash is as good as

the American White Ash (*Fraxinus americana*) for the decoration of parks and roadsides and the production of timber. The European Ash (*F. excelsior*), which is a magnificent tree in some parts of Europe, is a miserable failure here, and the great Ash-tree of northeastern continental Asia and northern Japan (*F. mandshurica*) can barely be kept alive in New England.

European Birch-trees grow well in the northern states until they are attacked by a borer which destroys them by thousands. The slender drooping branches of *Betula pendula* make it an interesting and attractive object, but it is not as handsome a tree as the Canoe Birch (*Betula papyrifera*) which is the handsomest of the white-barked Birches, and in one of its forms exceeds all other Birch-trees in size. *Betula Maximowiczii*, with pinkish bark and a native of northern Japan, is a handsomer tree than the Canoe Birch. It has been growing in this country for a quarter of a century, and although it is perfectly hardy it is too soon to speak of its permanent value.

The pale gray bark of the trunk and branches of the American Beech make it in winter the most beautiful of all Beech-trees, but as a planted tree it does not behave as well or grow as rapidly as the European Beech which, in spite of its darker-colored bark is a better tree for the decoration of our parks.

The northern Linden (*Tilia glabra* or *americana*) is a noble tree in northern forests where in deep moist soil it sometimes grows to the height of one hundred and thirty feet and forms a trunk four or five feet in diameter. It does not, however, take kindly to cultivation in a climate as warm as that of Massachusetts. Planted trees grow slowly here. The leaves are usually disfigured by red spiders and turn brown and fall during the summer. Little is known yet in cultivation of the Linden trees of the middle and southern states and a planter who wants Linden trees had best use some of the European species. There are five of these, and the three species of western Europe have been so thoroughly tested in the United States that it is possible to say they are among the most valuable trees which have been brought here from foreign countries. The most satisfactory of them here is *Tilia vulgaris*, a widely distributed but rather rare tree in Europe; it is believed to be a natural hybrid between the other species of western Europe, *T. platyhyllos* and *T. cordata*. There are large specimens of *T. vulgaris* in the suburbs of Boston.

No American Horsechestnut or Buckeye can compare in size or in the beauty of its flowers with the species of southwestern Europe (*Aesculus Hippocastanum*), which is well known to many Americans who have never heard there were Horsechestnut-trees growing naturally in the United States. The European Horsechestnut is another of the great trees of the world. It is as much at home here and grows to as large a size as it does in western Europe. Few trees have more conspicuous flowers or foliage of deeper green. It thrives, however, only in deep rich soil and usually resents city conditions. In some old gardens in Salem there are, however, as noble Horsechestnuts as can be found in the United States or Great Britain. It is a miserable

street tree, as can be seen in Paris, where the leaves turn brown and fall by mid-summer, and in New York and Boston where fortunately it has not been generally planted.

Among the foreign Maples of large size which have been planted in the eastern states only the so-called Norway Maple (*Acer platanoides*) has shown real power to flourish here. It is a smaller and less beautiful tree than the Sugar Maple, but the Sugar Maple, too, resents city conditions and objects to living at the seashore; and as the Norway Maple has proved a valuable tree for city and seashore planting it must be considered one of the really valuable foreign trees introduced into this country.

The Old World Walnut-tree (*Juglans regia*), sometimes called English or Persian Walnut, although it is a native of China, is a handsomer and more valuable tree than any of the American Walnut-trees, but unfortunately it is doubtfully hardy in the northeastern states and it will probably never grow to such a large size here or produce the great crops of nuts and the timber which make this such a useful tree in many parts of the world.

Another of the great trees of the world, the *Gingko*, flourishes in New England as well as it does in eastern Asia or Europe. It is the only survivor of a race which was once widely spread over the northern hemisphere. It is long-lived and able to support extremes of heat and cold, and grows equally well in Massachusetts, Georgia and California. The *Gingko* has been largely planted in the city of Washington, but in other parts of the United States the beauty of the tree when it gets beyond the juvenile state is not sufficiently understood.

Pseudolarix is another Chinese tree which is alone in its class, and although discovered only seventy years ago it has been long enough in this country to show that it is perfectly able to adapt itself to the Massachusetts climate. This is surprising for the home of *Pseudolarix* is on low mountain slopes not far from the coast and south of the Yangtse River. The European Larch, although less picturesque than the Larch of northeastern North America, is a larger and more valuable tree, and experience with it in New England shows that it is a tree which can be depended on and grows here to a large size.

It appears, therefore, from the experience gained in Massachusetts during a long period that only the following deciduous-leaved trees of large size have proved themselves valuable for general planting, for ornament and timber, in the northeastern states: the *Gingko*, the *Pseudolarix*, the European Larch, three species of Poplar, two of Willows and their hybrids, the *Cercidiphyllum*, the White Mulberry, the *Ailanthus*, the European Beech, one European Elm, one Birch, three Lindens, the European Horsechestnut, and the Norway Maple, nineteen in all.